

DNRC AQUATIC INVASIVE PLANT MANAGEMENT GRANT PROGRAM



2015
Biennium

Program Update

Conservation and Resource Development Division
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On the cover: Eurasian watermilfoil (EWM) caught in boat prop. Sanders County photo

DNRC Aquatic Invasive Plant Management Grant Program

2015 BIENNIUM PROGRAM UPDATE

INTRODUCTION

Aquatic Invasive Species (AIS) are organisms that are brought into Montana from other places. These include non-native clams, fish, mussels, plants, weeds, and disease-causing pathogens. AIS overwhelm lakes and rivers, kill fish and plants, and damage the delicate ecosystem that keeps our waters clean and abundant.

AIS harm recreational and agricultural resources by damaging boats and gear, clogging water pipes and hydropower facilities, causing ecological damage to fragile aquatic ecosystems, obstructing community water sources, and choking off irrigation systems.

Prevention, early detection, and education are the best strategies to combat AIS. The State of Montana has expanded AIS management efforts over the last several years and has implemented a multi-faceted program. As part of that strategy, DNRC provides grants to help local communities prevent and control AIS in their areas and allow people and communities to take an active role in AIS efforts in the state. The goal of the grants is to protect the natural resources of Montana from severe and unacceptable damage from AIS.

MONTANA AIS PRIORITIES

The three invasive aquatic plants listed below are noxious weeds in Montana. The plants are targeted for management based on their potential impacts to aquatic environments, agriculture, hydropower, and water-based recreation. Beyond these plants, quagga and zebra mussels are Montana's biggest AIS threat.

Eurasian watermilfoil (*Myriophyllum spicatum*) occurs at five locations in Montana: the lower Jefferson River, upper Missouri River and associated reservoirs (to upper Canyon Ferry Reservoir), Fort Peck Reservoir, lower Clark Fork (Noxon and Cabinet Gorge Reservoirs), and the lower Madison. With the exception of the lower Madison where EWM was detected in 2014, control was initiated on all EWM-infested water bodies in 2011 with follow-up treatments in 2012, 2013, and 2014. Control options for EWM in natural riverine systems are limited mainly to hand removal and barriers.

Curly leaf pondweed (*Potamogeton crispus*) is widespread in the Missouri River Watershed from Hebgen Lake downstream to Fort Peck. It is considered a new invader in the upper Flathead River (above Flathead Lake) where control programs were initiated in 2013 and continued in 2014. The plant is widespread below Flathead Lake and throughout the lower Clark Fork drainage.

BY THE NUMBERS

0 Mussel infestations in MT

17 MT Lakes/Reservoirs impacted by AIS

8 MT Rivers infested with AIS

~30,000 boats inspected by FWP in 2014

174 MT water bodies surveyed

1 new AIS detection in 2014

Flowering rush (*Butomus umbellatus*) infests more than 2000 acres in Flathead Lake and downstream waters of the Flathead and Clark Fork drainage into Idaho. The population in Montana is the primary source of infestation in the Columbia River Basin. Flowering rush is a sterile hybrid in Montana (does not spread by seed) but very effectively spreads by root fragments. Effective control options for flowering rush are not available at this time; however, research is on-going in Montana and Idaho.

Zebra and Quagga Mussels (*Dreissena polymorpha*, *Dreissna rostriformis*) have caused profound ecological changes in freshwater ecosystems where established, including loss of phytoplankton and microzooplankton. Zebra mussels cause mortality of native clams and mussels and cost municipal and industrial water facilities millions of dollars in control. If introduced into Montana, the result will include significant environmental and industrial damage. As of the drafting of this report, Montana is mussel free; however the threat is closing in from the south, north, and east.

One other invader being monitored is fragrant water lily (*Nymphaea odorata*). It is not listed as a noxious weed in Montana, but is a known invasive and is targeted for physical removal in small isolated infestations.

HIGHLIGHTS~

MONTANA STILL MUSSEL FREE!!!

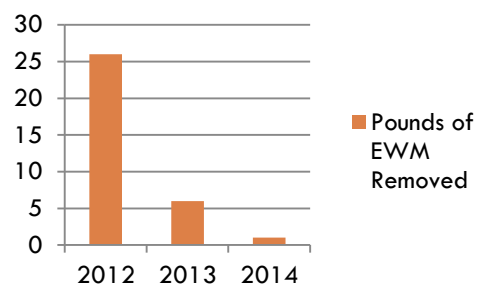


NOXON RESERVOIR Control efforts have resulted in a decrease in EWM from 247 acres in 2008 to approximately 9 acres in 2014—less than 10% of the original population.

AIS PARTNERS & SURVEYS Nearly 200 water bodies surveyed through a coordinated effort between more than 15 governmental and non-governmental entities.

BEAVER LAKE Discovered in fall 2011, a rapid response action was initiated on October 31, 2011, to control populations of EWM in the lake. Bottom barriers were immediately installed. In 2012, SCUBA divers dug and removed about 26 pounds of EWM from the lake. In 2013, the entire lake was snorkel surveyed and just six pounds of EWM were removed; fragrant water lily, introduced as an ornamental, was removed from the dock area to prevent spread. In 2014 only one pound of EWM was removed in two monitoring events.

Pounds of EWM Removed



2015 BIENNIUM PROJECTS

Since 2011, DNRC has awarded more than \$3 million for AIS prevention and control efforts (see Appendix B). The following projects were awarded AIS grant funding during the 2015 biennium. A summary of projects is listed in Appendix A and full reports for each project are available upon request.

Broadwater Conservation District

Headwaters of the Missouri River Region EWM Treatment and Control Project
\$25,500 (2013) + \$18,100 (2014) = \$43,600

The Broadwater Conservation District (CD) received two grants for Eurasian watermilfoil (*Myriophyllum spicatum*) (EWM) control efforts for the Missouri River Headwaters region. In addition to technical and financial support from DNRC, the Broadwater CD collaborated with Weed Management Services, MT Fish, Wildlife, & Parks, Jefferson and Broadwater county weed coordinators, Montana Conservation Corp, and numerous other partners to team up and lead a productive ground attack on EWM in the Jefferson Slough (near Cardwell), Jefferson River, Cottonwood Channel of the Missouri River, and at the Toston Dam boat ramp.

In addition to on-the-ground control, Broadwater CD performed a variety of outreach efforts including: AIS display at the county fair; AIS presentations at various events; and a service day by Broadwater CD's Big Sky Watershed Corp member.



Results: *Jefferson Slough* – To date more than 2,793 lbs. of EWM has been hand pulled from the Jefferson Slough, which is the uppermost known infestation of EWM in the Missouri Headwaters Region. In summer 2014, 352 lbs. were removed with the help of the Montana Conservation Corps. and Golden Sunlight Mine. It was determined that hand pulling in the slough has become a futile effort. The Broadwater CD is working closely with Jefferson County and others on a coordinated control effort for 2015 and beyond with a goal of working towards 95% reduction of the EWM population in the next three years.

Jefferson River – The Montana Conservation Corp team covered the area between Williams Bridge and Drouillard Fishing Access Site, which yielded the removal of 700 lbs. of EWM—a portion of the infestation.

Toston Reservoir – Placement of bottom barriers to prevent the spread and development of EWM. No hand pulling occurred in 2014, but previous efforts included the removal of approximately 4,947 lbs. of EWM since 2010. Until EWM infestations are addressed at the Jefferson Slough and Jefferson River (upriver), maintenance efforts will take place to control the population.

Canyon Ferry Wildlife Management Area (CFWMA), Cottonwood Channel – Herbicide treatment on 1.7 miles of the EWM-infested canal was funded by the Bureau of Reclamation (BOR). Future treatment will continue as needed during the 5-year project and funded by BOR.



EWM INFESTATION , KYLE MARTENS PHOTO, MONTANA CONSERVATION CORPS

Clearwater Resource Council

Volunteer Monitoring of High-risk Lakes in the Clearwater Valley
\$5,000

The objective of the Clearwater Resource Council's (CRC) project was to develop and establish a citizen science program to monitor six of the highest-risk lakes in the Clearwater Watershed for AIS. The project goal was to provide early detection of AIS introduction that will enable rapid response to eradicate or minimize the infestation. Teams of volunteers were recruited and trained to collect water samples from the lakes to be tested by eDNA techniques for the mussels and milfoil and also by microscopy methods for the juvenile form of the mussels. Additionally, aquatic flora was visually examined in situ for the presence of EWM.

CRC aquatics staff developed procedures that are appropriate for non-scientists yet still meet high-science standards. Kits were assembled for each lake to prevent cross-contamination. Five volunteer teams were recruited and trained. CRC staff sampled when and where volunteers were not available. A total of 24 samples, plus 6 quality control blanks, were collected between late May and late September. Individual lakes were sampled from 3 to 5 times over the season. The samples were submitted to the University of Montana Genetics Lab for eDNA testing and to the Montana Fish, Wildlife and Parks AIS lab for microscopic examination. To date, all sample results are negative, which is the expected result. Visual examination of aquatic flora also did not detect any invasive species.



Results: The CRC trained a team of volunteers made up of local landowners. In total 24 samples were collected and all processed samples to date have confirmed a negative result for AIS.



VOLUNTEERS PREPARE VELIGER SAMPLES FROM LAKE INEZ, DNRC PHOTO

Lake County

Flathead Basin AIS Strategic Plan Implementation – Flathead River CLP Removal
\$58,600 (2013) + \$29,900 (2014) = \$88,500

Surveys in 2011/2012 identified shoreline areas, bays, and river segments with CLP infestations. Seven areas in the northern half of Flathead Lake contained CLP, and scattered plants in Flathead River immediately upstream of the lake also contained CLP. In 2013, the bays/areas with CLP in Flathead Lake were resurveyed and dredged. Based on the data from the 2013 field season, approximately 90% of the CLP in the bays was

removed. However, given funding constraints and field conditions, only 50% of the CLP in the river was removed. Therefore, additional survey and dredge work on Flathead River was conducted in 2014 to further contain the existing CLP, and included the following tasks:

- Snorkel survey in infested areas and CLP marked with GPS and buoys
- Removed CLP by diver dredge
- Collected 15 plankton tows
- Developed GIS layer of infestation and provided photo documentation of activities

This project provided for a total of six weeks of field work, with approximately 140 hours of diver dredging and 120 hours of snorkel surveys.



Results: Based on the current data, this year's work should provide for a significant level of control on the Flathead River, thereby shifting efforts from control to maintenance/eradication for Flathead Lake in the 2015 field season

Lake County

Coram Watercraft Inspection Station

\$22,030

In 2009, the Flathead AIS Workgroup convened to develop an AIS Strategic Plan for the Basin. The plan, adopted in 2010, represented the initial step in establishing a program in the Flathead Basin to prevent, control or eliminate AIS within the watershed. One of the plan's integral components focused on the need for watercraft inspection stations at all ports of entry into the Flathead Basin, to supplement the protection provided by the Montana Fish, Wildlife & Parks (FWP) watercraft inspections stations. The workgroup purposely designed the Flathead Watercraft Inspection Program, to complement the state's existing AIS program, with an eye towards building a more robust system that would (1) overcome the limited days/hours of operation at border inspection stations; (2) better address the ability of mussels to evade detection; and (3) better educate boaters that might not pass through border inspection stations.

By 2012, the major points on entry into the Basin (e.g. Clearwater, Ronan, Roosville) were fully staffed, and combined with the watercraft inspection stations in Sanders County, it was clear that the remaining point of entry requiring support was the Highway 2 corridor. In order to combat threats emanating from Highway 2, funding was provided in 2013 by the City of Whitefish, the Bureau of Reclamation Hungry Horse, Trout Unlimited Flathead Chapter, and the Flathead Basin Commission to operate the Coram watercraft inspection station on Highway 2 as a full-time station, 7 days per week. However, in 2014, a funding shortfall would have curtailed these operations. Given the threat posed by Alibertan boaters, it was critical to maintain full coverage at this station. Therefore, DNRC provided one time only gap funding to cover a portion of the personnel costs at the Coram station that opened in April 2014 and was operated by FWP as part of its watercraft inspection program.



Results: 4,629 total inspections, 17 failed (vegetation, AIS vector risks, marine organisms, illegal fish).

Lake County

AIS Detection Dogs Pilot Program
\$10,000



TRAINED AIS DETECTION DOG, ORBEE, AT WORK, SUSAN BRUGGEMAN PHOTO

Working in partnership with the Province of Alberta, AIS detection two dog/handler teams were trained and tested in Clear Lake, CA, using California Fish & Game expertise and facilities. The dog/handler teams were then deployed at watercraft inspection stations in the Flathead Basin for a total of 10 search days during the 2014 field season. Deployment included continued testing to determine the efficacy of using AIS detection dogs at watercraft inspection stations.

I think this is an excellent idea, certainly worth the experiment to see how effective it can be. It's pretty clear to me that they are better at detecting than people, so why not augment people with dogs? —Chas Cartwright, Flathead Basin Commission chair and former superintendent of Glacier National Park



Results: An AIS video documenting this pilot effort is now available, and a final report documenting the results of the training and field deployment will be available shortly and will include:

- Ability of dogs to detect live/dead adult zebra/quagga mussels at watercraft inspection stations;
- Ability of dogs to detect mussels located in internal compartments of watercraft;
- Ability of dogs to detect mussels in shrink wrap type material;
- Ability of dogs to detect mussels as compared to human inspectors;
- Duration of detection under various conditions (high traffic volumes vs. low traffic volumes);
- Level of public acceptance; and
- Recommendations based on the results of the field testing and deployment, along with issues that need to be addressed in the event of statewide deployment.

Liberty County Weed District

Lake Elwell CLP Monitoring/Bottom Barrier Project
\$2,800

Lake Elwell is considered a high-risk water body for AIS. Small amounts of CLP were discovered in a 2012 survey and fortunately no EWM. This project is to continue monitoring for AIS and to place bottom barriers in the lake to control CLP. Due to staffing capacity issues, the lake was not surveyed in 2014. Grant funds will be used to perform surveys and monitoring in 2015.

Missoula County Weed District

AIS Monitoring and Vegetation Surveys of Missoula County Lakes and Rivers
\$28,730

This project focused on high-use lakes in Missoula County and Powell County. In 2013 eight lakes and two rivers were surveyed. In 2014, four lakes were surveyed. This was fewer lakes than originally forecasted, in part to partners taking over the job of monitoring a majority of the larger water bodies. The Clearwater

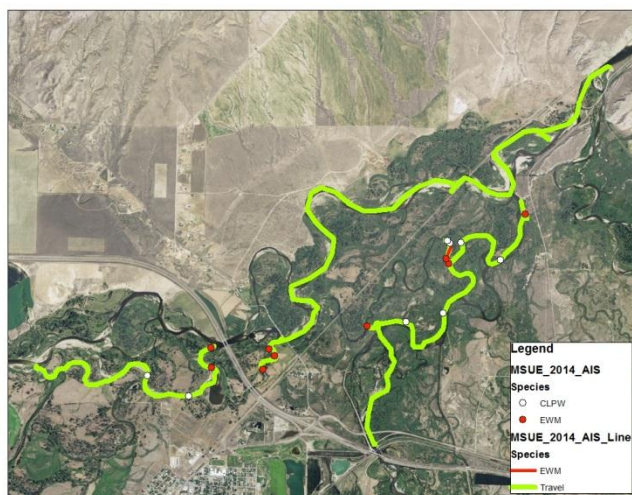
Resource Council and Powell County took over responsibility of monitoring lakes in their areas. We will continue to coordinate the monitoring of the lakes in Missoula County with our partners.



Results: No new AIS discovered.

Montana State University Gallatin County Extension

Gallatin County AIS Monitoring
\$5,000



This project included monitoring work in the northern portion of Gallatin County. Monitoring locations included the head of Hyalite Reservoir, access points along the Gallatin and Madison rivers, and several side channels of the lower Jefferson River. Twenty-three river access sites were surveyed for AIS—no populations of AIS were located at the river access sites. Six and 1/4 miles of the lower Jefferson and lower Madison were surveyed for AIS—six populations of CLP were located along the Lower Madison and four populations of EWM. Unfortunately, the EWM populations on the Lower Madison are new detections. Two populations of CLP were located along the lower Jefferson and five populations of EWM. Plankton samples were collected at the same 23 river access sites—results are pending.



Results: 23 river access sites surveyed. New detections discovered.

Lower Madison—6 CLP, 4 EWM

Lower Jefferson—2 CLP, 5 EWM

Ravalli County Weed District

Bitterroot River CLP Management
\$4,000

In the summer of 2014, Ravalli County field monitored the infestation of CLP along the Bitterroot River discovered by Missoula County Weed District in 2012. The Bitterroot River runs south to north. Missoula is downstream from Ravalli County. All fishing accesses starting in Corvallis were checked and the monitoring crew moved north along the downstream flow of the river to find the uppermost source of CLP. CLP was not found at Tucker Crossing, but was found in Stevensville (one fishing access north of Tucker). The first pondweed plants were found just downstream from the Stevensville fishing access. This observation was assessed and it appears that the uppermost source of CLP in the Bitterroot River is the Mitchell Slough.

Somewhere between the headwaters of the slough and its confluence with the Bitterroot River there is another source of CLP. The 1.5 miles monitored were infested. It is hypothesized that there is a ditch or a series of ditches that are feeding into the slough, contaminating it with CLP. This may or may not be the case, and Ravalli County will continue to monitor in the summer of 2015.



Results: Located the uppermost source of CLP in the Bitterroot River.

Salish Kootenai College and the University of Montana

Sequential Dry Ground/Foliar Herbicide Application for Suppression of Flowering Rush
\$28,500

This demonstration project includes a bare-ground herbicide application research study to determine the effectiveness of treatment for flowering rush control. In addition, in 2013 SKC completed field work for an invasive plant inventory from Perma to Thompson Falls Reservoir. Flowering rush and CLP were found throughout the stretches. No EWM was found through any sections surveyed to date.



Results: Dry ground application herbicide plots were sampled twice in 2014 with Habitat and Clearcast herbicide treatments. The average percent control for the Clearcast plot was 45.5-60% control. The average percent control for the Habitat applications was 87.6-95.4%. Demonstrations will continue in spring 2015.



FLOWERING RUSH, NRCS PHOTO

Sanders County

Managing Aquatic Invasive Plants in Sanders County 2014
\$125,000 (2013) + \$30,000 (2014) = \$155,000

This grant is the continuation of efforts to control AIS at Noxon and Cabinet Gorge reservoirs—the first site of detected EWM in the state. Findings from the 2013 reservoir-wide monitoring survey and pre-treatment evaluations in July 2014 indicate that dense EWM beds in Noxon Reservoir have decreased from 247 acres in 2008 to about 9 acres in 2014 as a result of herbicide treatments, bottom barriers, and diver removal. By contrast, dense EWM beds in Cabinet Gorge Reservoir, which were not previously managed, have increased from 78 acres in 2008 to 205 acres in 2013. In 2014, 181.4 acres were treated at Cabinet Gorge and 18.6 in Noxon Rapids Reservoir. Cabinet Gorge will be the primary focus for treatments in 2015.



Results: Pre- and post-treatment monitoring indicates that herbicide treatments to date in Noxon have resulted in EWM control rates ranging from 75% to 100%, with 90% control typical across these treatment plots.



DENSE BEDS OF EWM SHADE OUT NATIVE AQUATIC PLANTS AND IMPACT RECREATIONAL FISHERIES AND OTHER IMPORTANT AQUATIC RESOURCES ON NOXON RAPIDS AND CABINET GORGE RESERVOIRS.

Valley County

Fort Peck EWM Demonstration and Control Project
\$28,330

In August 2010, EWM was discovered in Fort Peck Lake and in the dredge cuts below Fort Peck Dam. This project includes aquatic plant surveys on the lower Missouri and Fort Peck Lake, and funding to help support herbicide demonstration plots on Fort Peck. The Army Corps of Engineers is the lead agency on the project and has contributed the bulk of the funding along with cost-share from local landowners. Herbicide treatments in 2014 consisted of the following:

- DC-3 research plot: 1.3 acres with aquatic herbicides and Rhodamine RWT dye
- DC-5 Rhodamine RWT dye only plot: 33.50 acres
- DC-2, DC-4, ES-6, ES-7 operational control plots (total of 36.2 acres with aquatic herbicides and Rhodamine WT dye). In addition, a small plot (1.2 acres) near the swim beach in the Dredge Cut was treated.

A total of 71 acres were treated.



Results: Herbicide applications and winter drawdown have resulted in a significant decline in EWM infestations.

LOOKING FORWARD—STATEWIDE AIS MONITORING

Prevention and early detection are the best strategies to combat AIS. The State of Montana has expanded AIS efforts over the last several years and has implemented a multi-faceted strategy that includes a seasonal mandatory watercraft inspection station program (operated by FWP), statewide surveying and monitoring of rivers and lakes, control of existing AIS infestations, and education and outreach efforts.

DNRC has supported its grantees by granting nearly half a million dollars to survey state waters to detect AIS. High-risk water bodies are those that have high volumes of recreational use, particularly use by recreational boaters. In coordination with FWP and local efforts, more than 100 water bodies (lake, reservoirs, river, river segments) were surveyed in 2014. A survey and monitoring plan for 2015 is underway. See Appendix C for a list of surveyed water bodies by county and Appendix D for locations of AIS infestations in the state.

APPENDIX A: AQUATIC INVASIVE SPECIES 2015 BIENNIUM GRANTS

<i>Application</i>	<i>Project Name</i>	<i>Grant Amount</i>
<u>2013 Awarded Grants</u>		
Broadwater CD	2013 Headwaters of the Missouri River Region EWM Treatment	\$8,000
Lake County	Flathead Basin Aquatic Invasive Species Control and Surveys	\$58,600
Missoula County WD	AIS Monitoring & Vegetation Survey Missoula County Lakes & Rivers	\$11,600
Salish Kootenai College	Herbicide Applications for Suppression of Flowering Rush & Lower Flathead River and Clark Fork River Inventory	\$28,500
Sanders Co 1	Managing Aquatic Invasive Plants in Sanders County 2014	\$125,000
Valley County WD	Aquatic Invasive Species on Fort Peck Reservoir	\$28,330
Total Grants Awarded 2013		\$260,030.00
<u>2014 Awarded Grants</u>		
Broadwater CD 2	2014 Headwaters of Missouri River Region EWM Control	\$18,800
Clearwater Resource Council	2014 AIS Volunteer Monitoring High-Risk Lakes in Clearwater Valley	\$5,000
Lake Co 1	Flathead Basin AIS Strategic Plan Implementation Effort 1 (Flathead River CLP Removal)	\$29,990
Lake Co 2	Flathead Basin AIS Strategic Plan Implementation Effort 2 (Watercraft Inspection Stations Coram, Flathead Lake, Swan Lake, Whitefish Lake)	\$12,030
Lake Co 3	Flathead Basin AIS Strategic Plan Implementation Effort 3 (AIS Sniffer Dogs)	\$10,000
Liberty Co WD	Lake Elwell CLP Monitoring/Bottom Barrier Project	\$2,800
MSU Gallatin Co Extension	Gallatin Co AIS Monitoring	\$5,000
Ravalli Co WD	Bitterroot River CLP Management Plan	\$4,000
Sanders Co 2	Managing Aquatic Invasive Plants in Sanders County 2014	\$30,000
Total Grants Awarded 2014		\$117,620.00
Total Grants Awarded—2015 Biennium		\$377,650.00

APPENDIX B: DNRC SPENDING ON AIS FY 2010–FY 2015

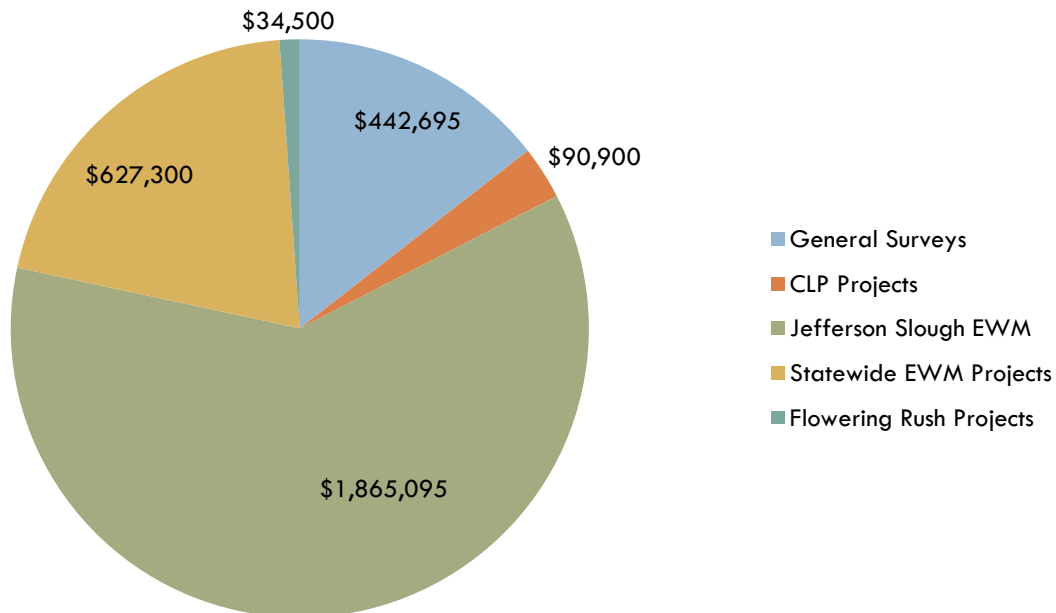
Project Costs to Date	DNRC	Match*
Control	\$2,248,195	\$1,278,126
Survey	\$325,265	\$104,646
Management Plan	\$426,500	\$106,000
Prevention Demo	\$60,530	\$115,440
Technical Support	\$120,500	0
	\$3,180,990	\$1,604,212

*Includes reported local and federal match. Actual match amounts may be greater.

**Does not include DNRC administrative costs.

Project Costs to Date	DNRC	Match*
General Surveys	\$442,695	\$227,116
CLP Projects	\$90,900	\$0
Jefferson Slough EWM	\$1,865,095	\$93,767
Statewide EWM Projects	\$627,300	\$1,354,626
Flowering Rush Projects	\$34,500	\$22,470

AIS DNRC Project Costs



APPENDIX C: LAKES, RESERVOIRS, RIVERS SURVEYED BY COUNTY

County	Lake or Reservoir		
Beaverhead	Beaverhead River	Elk Lake	Poindexter Slough
	Big Hole River	Lima	Red Rock River
	Clark Canyon Reservoir		
Big Horn	Afterbay Dam/Bighorn River		
	Bighorn Lake		
	Tongue River Reservoir		
Broadwater	Canyon Ferry	Missouri River	
	Cottonwood Slough/ponds	Toston Reservoir	
Carbon	Cooney		
Cascade	Roe River		
Deer Lodge	Clark Fork River FAS		
	Georgetown Lake		
	Warm Springs Kids Pond		
Fallon	South Sandstone Reservoir		
Fergus	Big Spring Creek	Upper Carter Pond	
Flathead	Ashley	Hanson-Doyle	Murphy
	Beaver	Hungry Horse	Murray
	Blanchard	Lake Blaine	Flathead River
	Bootjack	Lake Five	Rogers
	Dollar	Lake McDonald	Skyles
	Echo	Lion	Spencer
	Egan Slough	Little Bitterroot	Stillwater
	Fish Lake	Little McGregor	Sylvia
	Flathead Lake	Lost Coon	Tally
	Foy Lake	McGilvray	Whitefish Lake & River
	Halfmoon	McGregor	
Gallatin	Gallatin Pond	Hebgen	Hyalite

	Gallatin River		
Glacier	Lake Josephine	Marias River	Milk River
Granite	East Fork	Lower Willow Creek	
	Echo	Moose	
	Georgetown		
Hill	Bear Paw	Fresno	
Jefferson	Boulder River	Jefferson Slough	
	Jefferson River	Slaughterhouse Slough	
Judith Gap	Ackley		
Lewis & Clark	Bean	Hauser	Little Prickly Pear
	Blackfoot River	Holding Reservoir	Missouri River
	Canyon Ferry	Holter	Willow Creek
	Dearborn River	Lake Helena	
Lake	Flathead River	Lake Mary Ronan	Pablo
	Horseshoe	Loon	Swan
	Jette	Lower Crow	Van
	Kicking Horse	Ninepipe	
Liberty	Elwell (Tiber)		
Lincoln	Alvord	Glen	Sophie
	Big Therriault Creek	Kootenai River	Spar
	Bull	Lake Koocanusa	Tetrault
	Cad	Lavon	Topless Reservoir
	Cibid	Leon	Thompson Chain of Lakes
	Crystal	Little Loon	Yaak River
	Dickey	Savage	
Madison	Cataract	Ennis	Quake
	Cliff	Harrison (Willow Creek)	Ruby River
	Darlington Ditch	Madison River	Wade
Meagher	Newlan Creek		
Mineral	St. Regis River		
Missoula	Beavertail Hill Pond	Hidden	Pierce

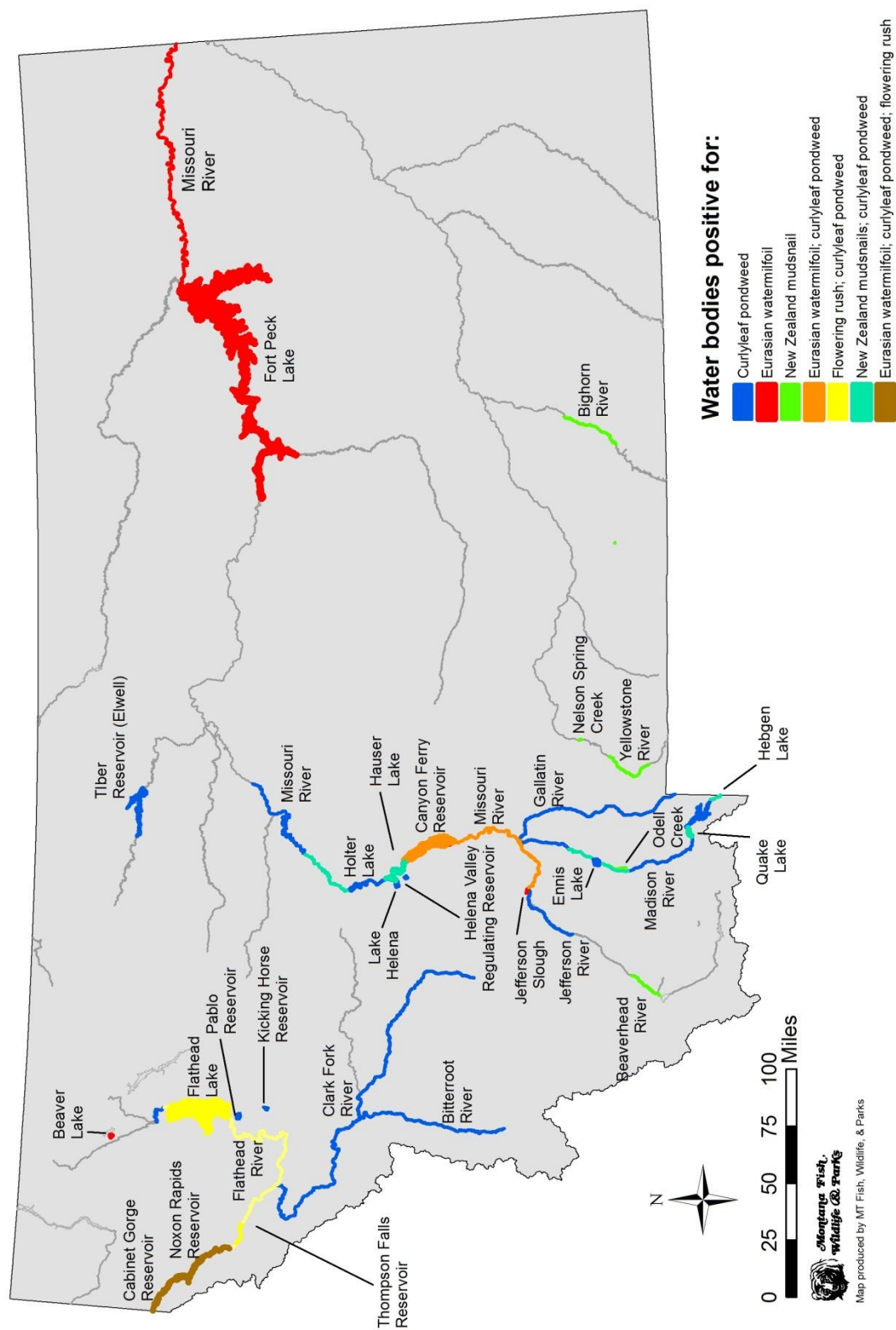
DNRC Aquatic Invasive Plant Management Grant Program

	Big Sky	Holland	Placid
	Blanchard	Lake Alva	Rainy
	Clearwater River	Lake Elsina	Salmon
	Cottonwood	Lake Inez	Seeley
	Elbow	Lake Marshall	Summit
	Frenchtown Pond	Lindberg	Tuppers
	Harpers	Lolo	
Park	Dailey	Nelson Spring Creek	Sacagawea
Philips	Nelson		
Pondera	Abbott	Lake Francis	
Powder	Powder River		
Powell	Browns	Mud	Tin Cup
	Conleys Lake	Nevada	Upsata
	Coopers		
Prairie	Homestead		
Ravalli	Bailey	Lake Como	Painted Rock
	Bitterroot River		
Rosebud	Castle Rock		
Sanders	Banana	Noxon Reservoir	Thompson Chain of Lakes
	Cabinet Gorge		
Stillwater	Stillwater River		
Teton	Bynum	Gibson	Pishkun
	Freezeout		
Valley	Fort Peck		
Wheatland	Deadman's Basin		
Yellowstone	Lake Elmo	Yellowstone River	

Note: Survey method dependent on a variety of factors such as risk of water body for infestation, previous survey efforts, type of system, observer expertise, etc.

APPENDIX D: INFESTED MONTANA WATERS

Aquatic Invasive Species Locations in Montana - 2014



Lakes/Reservoirs	County	Type of AIS*
Beaver Lake	Flathead	EWM
Cabinet Gorge Reservoir	Sanders	EWM, CLP, FR
Ennis Lake	Madison	CLP
Flathead Lake (northern half)	Lake/Flathead	FR, CLP
Flathead Lake (flowering rush survey)	Flathead	FR
Flathead Lake (portions-southern)	Flathead	FR
Fort Peck Dredge Cuts (Below Ft Peck Dam)	Valley	EWM
Fort Peck Reservoir (portions)	Valley others	EWM
Fort Peck Trout Pond	Valley	CLP
Gallatin Pond	Gallatin	CLP
Hauser Lake	Lewis & Clark	CLP
Hebgen Reservoir	Gallatin	CLP
Helena	L&C	CLP
Helena Holding Reservoir	L&C	CLP
Holter (high risk sites)	L&C	CLP
Kicking Horse Reservoir	Lake	CLP
Ninepipe Reservoir	Lake	CLP
Noxon Reservoir	Sanders	EWM, CLP, FR
Pablo Reservoir	Lake	CLP, FR
Thompson Falls Reservoir	Sanders	CLP, FR
Tiber Reservoir (Lake Elwell)	Liberty	CLP
Toston Reservoir	Broadwater	EWM, CLP

*EWM-Eurasian watermilfoil, CLP-Curly leaf pondweed, FR-Flowing rush

River or River Segment	County	Type of AIS*
Jefferson (lower)	Jefferson	EWM, CLP
Jefferson Slough	Jefferson	EWM, CLP
Missouri (Three-Forks to Toston Reservoir)	Broadwater	EWM, CLP
Missouri River (Toston Dam to Canyon Ferry)	Broadwater/ Gallatin	EWM, CLP
Missouri (Ft Peck Dam to Frazer Rapids)		EWM
Bitterroot River (6 points)		CLP
Bitterroot River (river mile 41 to river mile 21)	Ravalli	CLP
Clark Fork River (10 points)	Missoula	CLP
Clark Fork River Fish Access Site	Powell/ Missoula	CLP
Clark Fork River	Sanders	CLP, FR
Cottonwood slough/ditch/pond4/ deposition area where Missouri enters Canyon Ferry (considered part of Missouri)	Broadwater	EWM, CLP
Flathead River: 10 miles upstream from lake; FR at Fennon Slough but not observed above	Flathead	CLP, FR
Flathead River (river mile 66 to river mile 36) about 10 miles below Kerr Dam	Lake	CLP at river mile 45, FR
Gallatin	Gallatin	CLP
Madison	Madison	CLP, EWM
Lower Madison NEW	Madison	CLP, EWM
Missouri (Fort Benton to Loma)	Chouteau	CLP
Missouri (Judith Landing to Holmes Council)	Chouteau	CLP
Roe	Cascade	CLP

*EWM-Eurasian watermilfoil, CLP-Curly leaf pondweed, FR-Flowing rush